User Guide:
GSM1218UG001

Enfora GSM1218 Quad-Band SA-GL User Manual

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[Revised: 4/2/2010]

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GOVERNING LAW

This limited warranty shall be governed by the laws of the State of Texas, United States of America, without regard to conflict of laws principles. This limited warranty shall not be governed in any respect by the United Nations Convention on Contracts for the International Sale of Goods.

Revision History

Revision Number	Release Date	Description of Changes
1.00	4/30/04	Initial Release
1.01	6/4/04	Nomenclature Changes, Mounting Clarifications
1.02	6/7/04	Corrected Power Connector PNs
1.03	02/14/05	Updated warranty and technical support information
1.04	04/05/06	Added CE Label information

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1 Introduction

1.1 About the GSM/GPRS SA-GL

The GSM/GPRS SA-GL is a compact, stand-alone wireless IP (GSM/GPRS) modem. The GSM/GPRS SA is designed for computing devices operating Windows 98 SE, XP, 2000 Professional and ME. The platform can be used as a stand-alone serial device with other vertical applications. Enfora's GSM/GPRS SA-GL provides maximum versatility in a single affordable device.

1.2 About this Manual

Contained in this manual are instructions on how to install and configure the GSM/GPRS SA-GL modem. Please follow the instructions herein closely to avoid damaging the GSM/GPRS SA-GL.

The GSM/GPRS SA-GL modem contains an Enfora Enabler-IIG OEM module. Detailed information pertaining to the specifications and operation of the module will pertain, in part, to the GSM/GPRS SA-GL platform.

The information can be accessed at the Enfora website under Support/Downloads.

Refer to the following documentation for additional information, if required:

GSM0102AT001 - Enabler-G AT Command Set
GSM0108IG001 - Enabler-IIG Integration Guide
Enfora GSM-GPRS Family UDP-API Reference GSM0102PB002MAN

GSM0000AN001 - Enabler-G PPP Configuration for Windows 98
GSM0000AN002 - Enabler-G PPP Configuration for Windows 2000
GSM0000AN003 - Enabler-G Data Circuit Switched Call Configuration and Use
GSM0000AN004 - Enabler-G SMS Configuration and Use
GSM0000AN005 - Enabler-G Automated Network Connection Configuration and Use
GSM0000AN006 - Enabler-G Module Status Query
GSM0000AN007 - Enabler-G Status Reporting
GSM0000AN008 - Enabler-G PPP Configuration for Windows XP
GSM0000AN009 - Dynamic IP Assignment Support
GSM0000AN010 - Enabler-G PPP Configuration for PocketPC 2002
GSM0000AN011 - PAD Configuration and Use
GSM0000AN012 - Network Transparency Configuration for PAD
GSM0000AN013 - Enabler-G Sleep Mode Configuration and Use
GSM0000AN014 - Anytime PPP API Access

1.3 System Requirements

- Windows 98 SE / XP / 2000 Professional / ME operating systems or other serial-enabled platform
- One standard RS-232 serial port for GSM/GPRS SA GL configuration
- One standard plug for speaker and microphone*

*not required for stand alone operation

1.4 SA-GL Front and Back View

Figure 1: Front view of GSM/GPRS SA-GL modem.

Figure 2: Rear view of GSM/GPRS SA-GL modem.

2 Regulatory Compliance

2.1 FCC

The modem was tested and certified to meet FCC Parts 15 in a stand-alone configuration, which demonstrated that the GSM1218 SA-GL complies with Part 15 emission limits. FCC Part 22 & Part 24 is covered by the Enfora Enabler-IIG "modular approval" process for a transmitter. This approach, described by FCC Public Notice DA 00-131407 released June 26, 2000, is intended to afford relief to equipment manufacturers by eliminating the requirement for obtaining a new equipment authorization for the same transmitter when installed in a new device.

In order to use the GSM1218 SA-GL without additional FCC certification approvals, the installation must meet the following conditions:

For the transmitter to meet the MPE categorical exclusion requirements of 2.1091, the ERP must be less than 1.5 watts for personnel separation distance of at least 20 cm (7.9 in). Therefore, the maximum antenna gain cannot exceed +3.3dBi. If greater than 1.5 watts exists, then additional testing and FCC approval is required.

2.2 R&TTE - CE

The GSM1218 SA-GL modem has been fully tested and complies with all the requirements of EN301 489-1, EN301 489-7 and EN60950-1:2001. Compliance to EN301 511 has been demonstrated by testing on both the GSM1218 and the integrated GSM0108 module.

2.3 Disclaimer

The information and instructions contained within this publication comply with all FCC, GCF, PTCRB, R&TTE, IMEI and other applicable codes that are in effect at the time of publication. Enfora disclaims all responsibility for any act or omissions, or for breach of law, code or regulation, including local or state codes, performed by a third party.

Enfora strongly recommends that all installations, hookups, transmissions, etc., be performed by persons who are experienced in the fields of radio frequency technologies. Enfora acknowledges that the installation, setup and transmission guidelines contained within this publication are guidelines, and that each installation may have variables outside of the guidelines contained herein. Said variables must be taken into consideration when installing or using the product, and Enfora shall not be responsible for installations or transmissions that fall outside of the parameters set forth in this publication.

Enfora shall not be liable for consequential or incidental damages, injury to any person or property, anticipated or lost profits, loss of time, or other losses incurred by Customer or any third party in connection with the installation of the Products or Customer's failure to comply with the information and instructions contained herein.

3 Installation

3.1 Subscriber Identity Module (SIM) Card

The SIM, an integral part of any GSM terminal device, is a “smart card” that is programmed with subscriber information. The user information consists of an International Mobile Subscriber Identity (IMSI) number, which is registered with the GSM service provider, and an encryption Ki (pronounced “key”). This information consists of a microprocessor and memory installed on a plastic card. To install the SIM card into the modem, insert the SIM card in the modem as shown below in Figure 3.

Note: The SIM is *not* provided with the SA-GL modem. The SIM must be obtained from the GSM service provider and must be provisioned by the operator for data and/or voice. Always take care to protect the SIM: the GSM terminal will not operate without the SIM installed.

Figure 3: Inserting a SIM Card in a GSM/GPRS SA-GL Module

3.2 Connecting the Power Supply

The GSM/GPRS SA-GL modem can utilize input power ranging from 5 Vdc to 9 Vdc. If your unit did not include an optional, power supply or if you wish to configure a separate power interface, the following connector parts can be used to mate with the existing modem power connector:

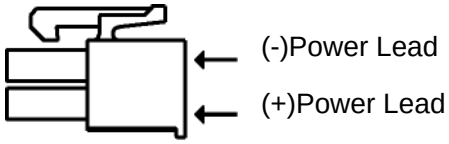
Connector Pins - Molex 43030-0009 MICROFIT TERM Gold 20-24

Plastic Housing - Molex 43025-0200 3.0mm (.118") Pitch Micro-Fit, Jr.™ Receptacle, Dual Row (the Enfora GSM/GPRS SA-GL incorporates a 2-pin configuration)

WARNING:

When assembling the Molex connector, plug the Positive (+) power lead in the bottom of the Molex connector. Improper connections will render the unit inoperable and will void the product warranty.

Proper Molex Configuration



To supply power to the GSM/GPRS SA-GL modem, connect the power supply to the power connector (labeled "**Power**") on the modem. Connect the other end of the power cable to a power source.

Note: Make sure the SIM card is inserted prior to connecting the power supply to the SA-GL.

Figure 4: Connecting The Power Supply To SA GL

The following tables provide the power characteristics of the GSM/GPRS SA-GL modem.

Enfora -GL (@ 9 Volts)			Average Current (mAmps)	Peak Current (Amps)
GSM 850	**GSM**	1 TX 1 RX	230 mA	1.42 A @ 32 dBm
		1 RX	160 mA	
		Idle	50 mA	
		Sleep	15 mA	
GSM 900	**GSM**	1 TX 1 RX	220 mA	1.70 A @ 33 dBm
		1 RX	160 mA	
		Idle	44 mA	
		Sleep	15 mA	
DCS 1800	**GSM**	1 TX 1 RX	210 mA	1.45 A @ 30 dBm
		1 RX	160 mA	
		Idle	40 mA	
		Sleep	15 mA	
PCS 1900	**GSM**	1 TX 1 RX	215 mA	1.50 A @ 31 dBm
		1 RX	156 mA	
		Idle	40 mA	
		Sleep	15 mA	

Table 1: GSM Operating Power

3.3 Connecting the Serial Cable

To connect the SA-GL with a local computing device, connect one end (male end) of the 9-wire RS232 Serial Cable to the SA-GL port labeled "**Serial**" and connect the other end to a computer.

Figure 5: Connecting the Serial Cable to SA-GL

3.4 Connecting the GSM/GPRS Antenna

4 The antenna is supplied by the user. The antenna must have a nominal impedance of 50 Ohms. The VSWR must be less than 2.0:1. System antenna gain should be 0-2 dB for optimum performance. See section 2 Regulatory Compliance

FCC.

The GSM/GPRS SA-GL operates at the 850/900/1800 and 1900 MHz frequency bands. Care needs to be taken when connecting the antenna since the right type of antenna will be required for proper operation of the modem. The antenna connector on the GSM/GPRS SA-GL modem is SMA Female. The antenna has to be connected to the connector labeled "**Antenna**" as shown below in Figure 6.

Figure 6: GSM/GPRS SA-GL Connecting the Antenna

4.1 Attaching a Microphone/Speaker

To place a voice call, insert a microphone/speaker to the port labeled "**MIC AUDIO**" as shown below in Figure 7. The plug is a standard 2.5mm audio connector. Many existing mobile phone headsets can be used.

Figure 7: Attaching a Headset to the GSM/GPRS SA-GL Module

4.2 LED Functions

The GSM/GPRS SA-GL modem has one LED on the front panel.

REG: Indicates GSM network registration status. Flashing when attempting to register on a GSM network. Solid when the modem is registered with a GSM network.

4.3 Mounting the SA-GL

The GSM/GPRS SA-GL includes two mounting options. The modem housing contains four thru holes that can utilize number 2 screws for securing the device. The other option available is the inclusion of four threaded holes for securing screws to be used to secure the device.

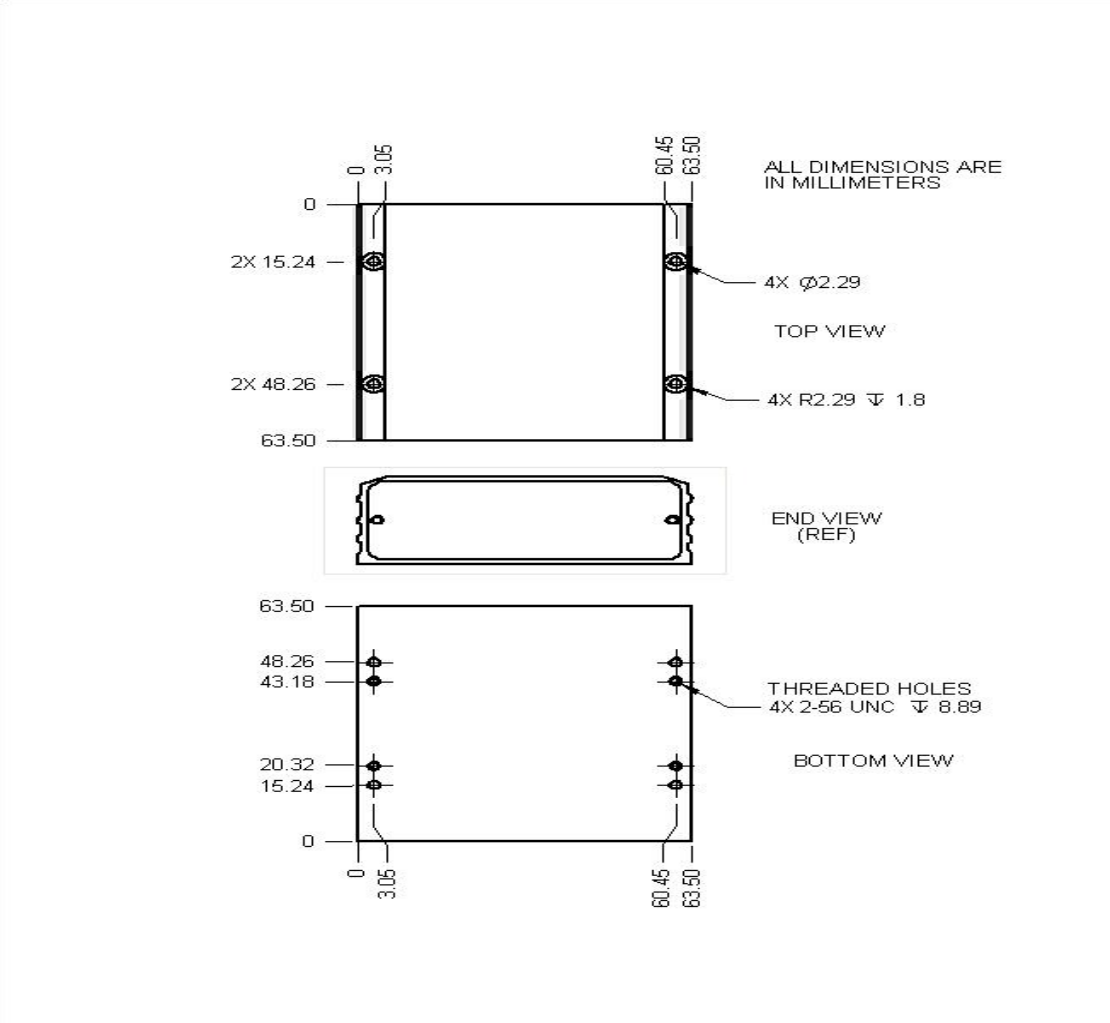


Figure 8 - Mounting Dimensions

5 Frequently Asked Questions (FAQ)

Q. How do I configure a PPP connection for the Windows 98?
A. Refer to "*GSM0000AN001 - Enabler-G PPP Configuration for Windows 98*" application note for details.

Q. How do I configure a PPP connection for Windows 2000?
A. Refer to the "*GSM0000AN002 - Enabler-G PPP Configuration for Windows 2000*" application note for details.

Q. How do I send and receive data and voice calls to/from a remote host?
A. Refer to "*GSM0000AN003 - Enabler-G Data Circuit Switched Call Configuration and Use*" application note for details.

Q. How do I send and receive SMS messages?
A. Refer to "*GSM0000AN004 - Enabler-G SMS Configuration and Use*" application note for details.

Q. How do I automate GSM/GPRS network connectivity on the SA GL?
A. Refer to the "*GSM0000AN005 - Enabler-G Automated Network Connection Configuration and Use*" application note for details.

Q. How do I query modem status parameters?
A. Refer to "*GSM0000AN006 - Enabler-G Module Status Query*" application note for details.

Q. How can I set detailed status reporting?
A. Refer to the "*GSM0000AN007 - Enabler-G Status Reporting*" application note for details.

Q. How do I configure a PPP connection for Windows XP?
A. Refer to the "*GSM0000AN008 - Enabler-G PPP Configuration for Windows XP*" application note for details.

Q. How can I use the Dynamic IP reporting feature on the SA-GL?
A. Refer to the "*GSM0000AN009 - Dynamic IP Assignment Support*" application note for details.

Q. How do I configure a PPP connection for PocketPC 2002?
A. Refer to the "*GSM0000AN0010 - Enabler-G PPP Configuration for PocketPC 2002*" application note for details.

Q. How can I use the UDP Packet Assembler/Disassembler feature on the SA-GL?
A. Refer to the "*GSM0000AN011 - PAD Configuration and Use*" application note for details.

Q. How do I configure transparent or non-transparent access using PAD on the SA-GL?
A. Refer to the "*GSM0000AN012 - Network Transparency Configuration for PAD*" application note for details.

Q. How do I configure different sleep modes on the SA-GL?
A. Refer to the "*GSM0000AN013 - Enabler-G Sleep Mode Configuration and Use*" application note for details.

Q. How do I configure the SA-GL for PPP API access without having network connectivity?
A. Refer to the "*GSM0000AN014 - Anytime PPP API Access*" application note for details.

6 Tech Support

For problems stemming from your network access, contact your GSM/GPRS carrier service. For technical support and customer service dealing with the modem itself, contact the company where you purchased the product. If you purchased the product directly from Enfora, visit the SUPPORT page on the Enfora website: http://www.enfora.com.